one of the children deposits one dollar a month with the teacher, from which sum the money for cocoa or milk at the daily luncheon and for the replenishing of desk supplies is taken. The children will each be given in lieu of this dollar the same sum in toy money, out of which they will pay their bills at the end of the week, and later will keep their own accounts. This again furnishes concrete work in addition, subtraction, and multiplication. The terms "cent," "nickel," "dime," "quarter," and "half-dollar" will gradually get their valuation in terms of materials used and their relative numeric value. The notation of any numbers will be given whenever either a temporary or a permanent record is needed. In addition to this use of number in real measurement, the children will have these facts of number repeated in number games which they enjoy as they do any games, and which will be useful in memorizing and quickly recalling these facts which they have acquired slowly in cooking, experimenting, and making.

Literature.—While the stories will be selected in the main for literary merit and childlike character, some will be told which may illuminate or add beauty and fancy to things and phenomena met in their work, such as the story of the forging of the sword in *Siegfried*, or Hawthorne's version of King Midas or "The Golden Touch," the story of "The Walnut Tree that Wanted to Bear Tulips" from *Cat Tails and Other Tales*, the legend of the poplar tree from *Nature Myths and Stories* (Cooke). Some of the *Jungle Stories* will be read to the children, and they will read some of Æsop's *Fables*.

Reading.—Words and sentences will be written upon the blackboard in all the work, wherever they can be made to serve as a record or be referred to again and again in a lesson. The directions for cooking and for measurements and moves in manual training and construction will be written upon the blackboard and used instead of the spoken directions. In reviewing the results of any piece of work or experiment the outcome will be written upon the blackboard in the children's words, read, and then printed and used again as a reading lesson. They will also have short stories to read.

Games in phonics and rhyme-making will take the same place in reference to reading that the number drills do to number.

Painting.—Stories will be illustrated, and pictures of the landscape will be painted from time to time; drawings will be made as working plans and to fill the place of oral description.

SECOND GRADE.

CLARA ISABEL MITCHELL.

THE outline of work for the second quarter is a continuation of that for the first, published in December. It is based upon (1) the social life of the community, its work and play, especially that in which the children have a conscious part; (2) the natural environment.

The program provides for (1) the carrying on of a few fundamental social occupations; (2) field work for the freer contact with outdoor nature; (3) games, plays, and entertainments; (4) industrial excursions; (5) lessons and stories in nature, history, geography, literature, and mathematics as a help to the interpretation of experiences gained at first hand; (6) the development of skill in expression, modeling, painting, drawing, writing, oral reading, singing.

The following plan is prepared tentatively, and will be carried out only so far as it seems to be indicated in the life of the schoolroom.

I. OCCUPATIONS.

Housekeeping.— Care of desks and lockers, house-plants, and indoor animals. Serving of school luncheons; washing of dishes. Making of starch from rice and potato. Making of paste from cornstarch.

Cooking.— Boiled potatoes. Grinding of corn into meal. Cooking of home-ground and mill-ground meal. Cornstarch mold. Custard. Ice-cream, made according to rule learned in last year's work. Cocoa. In the boiling of potatoes, rice, and cornmeal, free experiments will be allowed, and records made and afterward discussed. Rules will then be formulated, printed, and followed.

RULE FOR BOILING POTATOES.

Pare potatoes. Have ready enough boiling water to cover the potatoes well. Add one teaspoonful of salt to each quart of water. Put the potatoes into the water. Boil for a half hour or until tender. Pour off all the water. Shake the dish of potatoes in a draft of air until they grow white and mealy.— *Mrs. Norton.*

RULE FOR BOILING RICE.

Pick over and wash the rice thoroughly. Have ready a pint of boiling water for every quarter of a cup of rice. Add one-fourth of a tablespoonful of salt to the pint of water. Put the rice into the boiling water and cook rapidly until it is tender. Stir carefully with a fork to prevent sticking. Drain in a sieve. Pour over it a half-cup of cold water. Put in the oven to dry and heat.— *Mrs. Norton.*

CORNSTARCH MOLD.

1 cup of milk.
¼ teaspoonful of vanilla.
2 tablespoonfuls of cornstarch.
½ saltspoonful of salt.
2 tablespoonfuls of sugar.

Scald the milk, leaving out two tablespoonfuls. Mix the cornstarch, salt, and sugar. Add the two tablespoonfuls of milk. Mix thoroughly. Add gradually the scalded milk. Boil one minute, then cook for fifteen minutes over hot water. Add flavoring. Pour into molds that have been wet in cold water.

RULE FOR MAKING COCOA.

⅔ cup of milk.
⅓ cup of water.
2 teaspoonfuls of cocoa.
2 teaspoonfuls of sugar.
A bit of salt.

Scald the milk. Mix the cocoa and sugar. Gradually stir in the hot water. Stir until smooth. Put on stove and boil for one minute. Add hot milk and salt. Beat with egg-beater until foamy.—*Mrs. Norton.*

RULE FOR MAKING CUSTARD.

1 pint of milk.
Yolks of 3 eggs.
5 tablespoonfuls of sugar.
½ saltspoonful of salt.
½ teaspoonful of vanilla.

Beat the yolks. Add sugar and salt and beat well. Pour the hot milk in slowly. Mix well. Pour all into double boiler. Cook, stirring constantly till smooth and thick like cream. Pour through a fine strainer.

Wood-working.—Making of a hand-loom. A frame will be made thirty-six inches long and twenty-four inches wide of strips of half-inch poplar cut two inches wide, set on edge, and nailed together at the ends with wire nails. Into each corner of the frame is to be set an upright six inches high, of similar lumber, with an inch auger hole bored within one inch of the top. Through opposite auger holes at each end of the frame pass three-quarter inch dowels twenty-four inches long.

Pottery.—Making vases for flowers in the schoolroom, experimenting with the potter's wheel and salt-glaze.

Weaving.—Rugs for playhouses of the first-grade children.

Dyeing.—Wool-roving for rug-weaving.

RULE FOR BLUE DYE.

(For 100 grams of wool.)

Dissolve 16 grams of alum and 10 grams of cream of tartar in water. Heat to about 160°. Enter skein of wool and boil for one hour. Put skein into warm water containing desired quantity of indigo carmine. Boil until color suits.

GREEN.

(For 100 grams of wool.)

Boil 100 grams of fustic with 18 grams of alum for forty minutes. Soak skein in the dye till a good yellow is obtained. Remove fustic chips and

wool. Add indigo carmine to the dye a teaspoonful at a time until color suits.

BLACK.

(For 100 grams of wool.)

Boil skein for one hour with 3 grams of bichromate of potash and 1 gram of sulphuric acid. Wash, and boil for one hour with 50 grams of logwood chips.

PURPLE.

(For 100 grams of wool.)

Boil wool for one hour with 6 grams of tin crystals and 9 grams of cream of tartar; then in a separate bath, with 30 grams of logwood chips.

BROWN-RED.

(For 100 grams of wool.)

Boil wool for one hour with 3 grams of bichromate of potash; then with 60 grams of madder. Wash thoroughly to remove bits of the madder-root.

RED.

(For 100 grams of wool.)

As above, using 10 grams of alum and 8 grams of cream of tartar instead of the bichromate in the first bath.

YELLOW.

(For 100 grams of wool.)

Boil for one hour with 4 grams of alum and 2 grams of oxalic acid; then with 40 grams of fustic chips.

OLD GOLD.

(For 100 grams of wool.)

As above, substituting bichromate of potash, 4 grams, for the alum and oxalic acid.

BROWNS.

(For 100 grams of wool.)

Boil skein for one hour with 10–20 grams of catechu, then for a half-hour with either copper sulphate, ferrous sulphate, or bichromate of potash, 3 grams.

II. FIELD EXCURSIONS.

During the winter season excursions will be infrequent, taken on the milder days to the parks, lake, and prairie areas, to observe effects of seasonal changes.

III. GAMES, PLAYS, AND ENTERTAINMENTS.

Games.—Tommy Tiddler's ground. Hunting game. Clapping. Exercises in two-fourths, three-fourths, four-fourths, and six-eighths rhythms. Phonics games. Number games.

Plays.—Occasional pantomiming of stories chosen by children and approved by the teacher. Arrangement of dialogue and action for paper dolls in the toy theater.

Entertainments.—Celebration of Washington's and Lincoln's birthdays in appropriate stories, reading, and music; dancing and games with all the other children of the school to mark the holidays. Making and sending of valentines on St. Valentine's day. Reports of work and telling of stories for one morning exercise of each month.

IV. INDUSTRIAL EXCURSIONS.

To markets; coal yard; park conservatory; textile factory; Hull House; Art Institute.

V. SUBJECT-MATTER FOR LESSONS.

Nature study.—Combustion as illustrated by burning candle: (1) melting of wax; (2) rising of vapor; (3) structure of flame; (4) necessity of air; (5) water and carbon as products of combustion; (6) making of tallow candles.

Coal as fuel: (1) comparison of hard and soft coals; (2) visit to coal yard to learn sizes and prices of coals in the market; (3) reasons for differences in sizes and prices; (4) difficulty of mining, learned through pictures and stories; (5) coke, gas, tar, and ash as products of combustion; of smoke of soft coal.

Light: (1) colors of the spectrum as shown by glass prism; (2) comparison with pigments in the paint box; (3) painting of the rainbow.

Water: (1) purification by filtering through cloth, paper, gravel; (2) boiling; (3) distilling; (4) testing, on clear glass, of rainwater, swamp water, well, lake, and distilled waters; (5) view of pure and impure water through microscope.

Dissolution and crystallization illustrated by dissolving salt, sugar, copper sulphate and bichromate of potash in beakers of cold water and boiling water. Slow evaporation. Study of crystals formed on strings hung in the solution.

History.—Methods of cooking, gardening, building, pottery-making, spinning, weaving, sewing, dyeing, and leather-working among peoples of the shepherd and agricultural stages of history. Ancient Hebrews and modern Arabs as typical shepherds. Lake-dwellers of Switzerland; modern Egyptians and Greeks and Pueblo-dwellers as agriculturists. Making of miniature villages for illustration. Plays or dramatizations to show industrial processes, home life, and games of those peoples. Patriarchal government exemplified by Abraham and Jacob. Village life illustrated by the Lake- and Pueblo-dwellers.

Geography.—Stories, pictures, and descriptions of ancient Palestine and modern Arabia. Deserts, oases, springs, wells. Methods of traveling across the desert, ancient and modern. Sheep, goats, camels, and horses of the Arabs. Transportation of woven fabrics to Chicago. Pictures of stock-rais-

ing region of our country. Pictures of woolen mills, spinning and weaving machinery. Markets of the winter season. Transportation of fruits and vegetables from Florida and California. Comparison of average temperature of Chicago weather with temperature of the hothouse; with average temperatures of the fruit-growing regions, Florida, Cuba, California.

Literature.—Continuation of the Bible stories of shepherd life, Abraham, Isaac, Jacob, Joseph, and David. Twenty-third Psalm. *Robinson Crusoe.* The *Jungle Book* (to be read aloud at luncheon time). Selections from the *Child's Garden of Verses.* Fairy tales.

Mathematics.—Telling of time. Table of time. Thermometer. Counting by twos, fours, fives, tens, and threes, as it is involved in the occupations of school. United States money. Keeping of school accounts. Notation of the decimal system. Addition. Subtraction—all to be taught when needed for the carrying on of the problems of the school work.

THIRD GRADE.

GUDRUN THORNE-THOMSEN.

Cooking.—Rice, tomato, pea, and celery soups; chicken blanquette, and chicken soup; breakfast foods; bread, corncake.

The bread and corncake will this time be made from the flour which the children themselves have made.

The cooking introduces the child to laboratory methods, gives him an opportunity to observe cause and effect, and, most important of all, allows him to experience the joy of producing something of value to the community.

There is, of course, no set method of work. Sometimes the recipe is dictated to the children and they try to follow it step by step, learning sometimes to their dismay that inattention here gives sorry results. At other times, the children by means of experiments, and with the help of questions and suggestions from the teacher, work out the recipe.

A close record is kept of the children's questions and suggestions, since they give a clue to the subject-matter which may be studied with greatest benefit.

In the cooking, as in all other work, when the child is acting freely and independently, the teacher has the greatest possible opportunity for a close study of her pupils, for in such work they display their individual characteristics and the natural movement of their minds.

At the end of the quarter the children will prepare a lunch for their mothers.

Subject-matter related to the cooking:

History.—The farm study of the autumn quarter to be continued. As an outgrowth of the study of the one farm which the children visited, they will consider a typical farm and the beginnings of a farming community. This